

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

KOJIMA, M. et al.

Atty. Ref.: 1207-93

Serial No. unknown

Group:

Filed: February 14, 2002

Examiner:

For: DAMPER AND AUTOMOBILE SEAT HAVING THE DAMPERS

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February 14, 2002

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

In order to place the above-identified application in better condition for examination, please amend the application as follows:

IN THE CLAIMS

Please substitute the following amended claims for corresponding claims previously presented. A copy of the amended claims showing current revisions is attached.

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3. The damper according to claim 1, wherein said silicone-based unvulcanized rubber has a degree of plasticity of not less than 30 and not more than 420.

4. The damper according to claim 1, wherein said silicone-based unvulcanized rubber has a degree of plasticity of not less than 60 and not more than 320.

5. The damper according to claim 1, wherein said silicone-based unvulcanized rubber has a degree of plasticity of not less than 160 and not more than 320.

6. The damper according to claim 1, wherein said pair of members are disposed in such a manner as to be relatively rotatable with respect to each other.

7. The damper according to claim 1, wherein at least one of said pair of members has an uneven surface in contact with said silicone-based unvulcanized rubber, and said uneven surface prevents the slippage of said silicone-based unvulcanized rubber in a vicinity of said uneven surface in the relative movement of said pair of members.

8. The damper according to claim 1, wherein at least one of said pair of members has, on a surface thereof in contact with said silicon-based unvulcanized rubber, one of a projection and a groove extending in a direction intersecting a direction of the relative movement.

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11. The damper according to claim 1, wherein said pair of members are disposed in such a manner as to be relatively linearly movable with respect to each other.

12. The damper according to claim 1, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having an arm portion and a housing body integral to said arm portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said the silicone-based unvulcanized rubber being disposed in the gap, said damper being adapted to transmit the rotation of said automobile seat to said housing by means of said arm portion, and said gap forming member being adapted to be fixed to a chassis on which said automobile seat is rotatably installed.

13. The damper according to claim 1, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having an arm portion and a housing body integral to said arm portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

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said silicone-based unvulcanized rubber being disposed in the gap, said housing being adapted to be fixed by means of said arm portion to a chassis on which said automobile seat is rotatably installed, and said damper being adapted to transmit the rotation of said automobile seat to said gap forming member.

14. The damper according to claim 1, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having a collar portion and a housing body integral to said collar portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said silicone-based unvulcanized rubber being disposed in the gap, said damper being adapted to transmit the rotation of said automobile seat to said housing by means of said collar portion, and said gap forming member being adapted to be fixed to a chassis on which said automobile seat is rotatably installed.

15. The damper according to claim 1, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having a collar portion and a housing body integral to said collar portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said silicone-based unvulcanized rubber being disposed in the gap, said housing being adapted to be fixed by means of said collar portion to a chassis on which said automobile seat is rotatably installed; and said damper being adapted to transmit the rotation of said automobile seat to said gap forming member.

16. The damper according to claim 12, wherein said housing body has a plurality of concentric arcuate projections, and said gap forming member has a plurality of concentric hollow cylindrical recessed portions in which said arcuate projections of said housing body are respectively disposed with the gap therebetween.

17. The damper according to claim 12, wherein a slit extending radially and communicating with the gap is formed in said gap forming member.

18. An automobile seat comprising:
said damper for an automobile seat according to claim 12; and
a seat provided rotatably on said automobile chassis,
the rotation of said seat being transmitted to one of said housing and said gap forming member, and another one of said housing and said gap forming member being fixed to said chassis.

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REMARKS

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made.**"

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

3. The damper according to claim 1-~~or~~2, wherein said silicone-based unvulcanized rubber has a degree of plasticity of not less than 30 and not more than 420.

4. The damper according to claim 1-~~or~~2, wherein said silicone-based unvulcanized rubber has a degree of plasticity of not less than 60 and not more than 320.

5. The damper according to claim 1-~~or~~2, wherein said silicone-based unvulcanized rubber has a degree of plasticity of not less than 160 and not more than 320.

6. The damper according to ~~any one of~~ claims 1-~~to~~5, wherein said pair of members are disposed in such a manner as to be relatively rotatable with respect to each other.

7. The damper according to ~~any one of~~ claims 1-~~to~~6, wherein at least one of said pair of members has an uneven surface in contact with said silicone-based unvulcanized rubber, and said uneven surface prevents the slippage of said silicone-based unvulcanized rubber in a vicinity of said uneven surface in the relative movement of said pair of members.

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8. The damper according to ~~any one of claims 1 to 7~~, wherein at least one of said pair of members has, on a surface thereof in contact with said silicon-based unvulcanized rubber, one of a projection and a groove extending in a direction intersecting a direction of the relative movement.

11. The damper according to ~~any one of claims 1 to 10~~, wherein said pair of members are disposed in such a manner as to be relatively linearly movable with respect to each other.

12. The damper according to ~~any one of claims 1 to 10~~, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having an arm portion and a housing body integral to said arm portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said the silicone-based unvulcanized rubber being disposed in the gap, said damper being adapted to transmit the rotation of said automobile seat to said housing by means of said arm portion, and said gap forming member being adapted to be fixed to a chassis on which said automobile seat is rotatably installed.

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13. The damper according to ~~any one of claims 1 to 10~~, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having an arm portion and a housing body integral to said arm portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said silicone-based unvulcanized rubber being disposed in the gap, said housing being adapted to be fixed by means of said arm portion to a chassis on which said automobile seat is rotatably installed, and said damper being adapted to transmit the rotation of said automobile seat to said gap forming member.

14. The damper according to ~~any one of claims 1 to 10~~, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having a collar portion and a housing body integral to said collar portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said silicone-based unvulcanized rubber being disposed in the gap, said damper being adapted to transmit the rotation of said automobile seat to said housing by

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means of said collar portion, and said gap forming member being adapted to be fixed to a chassis on which said automobile seat is rotatably installed.

15. The damper according to ~~any one of claims 1 to 10~~, wherein said damper is a damper for an automobile seat, and includes:

a housing serving as said one member and having a collar portion and a housing body integral to said collar portion; and

a gap forming member serving as said other member and accommodated rotatably in said housing body, said gap forming member forming a gap in cooperation with an inner surface of said housing body,

said silicone-based unvulcanized rubber being disposed in the gap, said housing being adapted to be fixed by means of said collar portion to a chassis on which said automobile seat is rotatably installed, and said damper being adapted to transmit the rotation of said automobile seat to said gap forming member.

16. The damper according to ~~any one of claims 12 to 15~~, wherein said housing body has a plurality of concentric arcuate projections, and said gap forming member has a plurality of concentric hollow cylindrical recessed portions in which said arcuate projections of said housing body are respectively disposed with the gap therebetween.

17. The damper according to ~~any one of claims 12 to 16~~, wherein a slit
extending radially and communicating with the gap is formed in said gap forming
member.

18. An automobile seat comprising:
said damper for an automobile seat according to ~~any one of claims 12 to 17~~;
and
a seat provided rotatably on said automobile chassis,
the rotation of said seat being transmitted to one of said housing and said
gap forming member, and another one of said housing and said gap forming member
being fixed to said chassis.